



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/606,557

06/26/2003

Xizeng Shi

2818P

5268

7590

06/06/2005

SAWYER LAW GROUP LLP

P.O. Box 51418

Palo Alto, CA 94303

EXAMINER

SMITH, BRADLEY

ART UNIT

PAPER NUMBER

2891

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,557

Applicant(s)

SHI, XIZENG

Examiner

Bradley K. Smith

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 19-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-17 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 18 is/are rejected.
- 7) ☒ Claim(s) 3-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: search notes.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 and 2 are rejected under 35 U.S.C. 102(a) as being anticipated by the applicant's disclosed prior art. The prior art discloses a magnetic memory element having a top portion and a bottom portion; a first write line (1001) below the magnetic memory element, the first write line being electrically connected with the bottom portion of the magnetic memory element; a second write line above the magnetic memory element, the second write (1201) line being electrically isolated from the magnetic memory element and oriented at an angle to the first write line (see figure 2). With regards to claim 2 the prior art disclose the angle is 90 degrees.

3. Claims 1-2 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Rinerson et al. (US Patent 6,850,455). Rinerson et al. disclose a magnetic memory element having a top portion and a bottom portion; a first write line (210) below the

magnetic memory element, the first write line being electrically connected with the bottom portion of the magnetic memory element; a second write line above the magnetic memory element, the second write (215) line being electrically isolated from the magnetic memory element and oriented at an angle to the first write line (see figure 2). With regards to claim 2 Rhinerson disclose the angle is 90 degrees. With regards to claim 18 Rhinerson disclose an array (see figure 1) of memory elements.

Allowable Subject Matter

4. Claims 11-17 are allowed.
5. Claims 3-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests the a selection device residing below magnetic memory element and the electrically connected to the top portion of the magnetic memory element (claims 3-7), wherein the second write line further includes a central portion and an edge region, the edge region including not facing the magnetic memory element, the edge region including a ferromagnetic cladding layer, thereby concentrating a magnetic field proximate to the magnetic memory element (claims 8 and 9), the first write line includes a core of soft magnetic material (claims 10 and 11), wherein the first write line is a multilayer structure including

Art Unit: 2891

at least one nonmagnetic layer and at least one soft magnetic layer adjacent to the at least one nonmagnetic layer (claims 12 and 13), wherein the first write line is a multilayer structure including at least one nonmagnetic layer and at least one soft magnetic layer adjacent to the at least one nonmagnetic layer (claim 14) a conductive stud having a lateral geometry, the stud for electrically connecting the magnetic element and the selection device and residing between the magnetic memory element and the selection device; and wherein the magnetic memory element is formed outside a region delineated by the lateral geometry of the stud (claim 15) a conductive stud having a lateral geometry, the stud for electrically connecting the magnetic element and the selection device and residing between the magnetic memory element and the selection device', and wherein the magnetic memory element is formed partially within a region delineated by the lateral geometry of the stud (claim 16), wherein the first write line includes at least one layer of ferromagnetic material; and wherein the magnetic element is a magnetic tunneling junction device including a pinned layer, a portion of the at least one layer of the first write line functioning as the pinned layer (claim 17).

Response to Arguments

7. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 2891

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is (571) 272-1884. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'BS/A', is positioned above the printed name and title of the examiner.

Brad Smith
Primary Examiner
Art Unit 2891